

REMARKS

Claim 15 stands objected to because of the informality in the use of the word “operative” in line 13. As noted by the Examiner, the word should be “operatively” and claim 15 has been so amended.

In addition, claim 15 has been amended to delete from line 6 the word “thereof”. The word was improperly used in original claim 15. In addition, in line 10, the word “arms” has been replaced by “end portions”. This change provides proper antecedent basis.

Claims 1, 2 and 9 stand rejected under 35 USC §102(b) as anticipated by Lindley et al (U.S. 5,375,942).

Lindley et al is cited as showing a general construction of a vibration isolation system for an engine-driven vibratory screed, including a blade, a vibratory exciter mechanism, including the engine, attached to the blade, and an operating handle connected to the exciter mechanism. The Examiner finds the recited improvement as being known in a bifurcated frame member (22) having a pair of arms (26) positioned to straddle the exciter mechanism (70) for attachment on laterally opposite sides thereof. In addition, Lindley et al shows an elastomeric vibration isolator (42) captured between each arm and a surface of the exciter mechanism, the isolator confined to limit vertical compressive movement and to permit substantially greater horizontal shear movement (inherent in the relative positioning of the members). Finally, a retainer (54) attached to one of the arms and to the exciter is adapted to engage the isolator to limit the amplitude of horizontal shear movement.

This rejection is respectfully traversed in view of the amendment to claim 1 above and the comments which follow.

The novelty in the present invention is not the discovery of an elastomeric mount that has a durometer or “optimum value”, as indicated by the Examiner with respect to the rejection of claim 10, but rather having discovered a way of utilizing a low

durometer mount to minimize hand/arm vibration, while providing a means to temporarily stiffen the elastomeric isolator for purposes of machine control.

In Lindley et al, a vibration isolator that is of sufficiently low durometer to provide the benefit of applicant's hand/arm vibration isolation cannot be used because there would be a loss of operator control. Stated another way, in Lindley et al the constant controlling factor is operator control and, as a result, hand/arm vibration minimization is lost.

In accordance with the subject invention, operator control and hand/arm vibration are addressed simultaneously. During normal operation, the low durometer isolator provides effective isolation of vibrations to the hand and arm of the operator. However, in response to control movement applied to the operating handle by the operator, the retainer, which is normally spaced from the vibration isolator, engages the isolator, thus permitting the operator to exercise proper control over the screed. During normal operation, minimization of vibration transmitted to the operator is effected by the use of a low durometer elastomer, but operator control of the screed is still possible when excessive movement of the isolator is prevented by contact from the retainer.

In the apparatus of Lindley et al, the choice must be made of using either a low durometer isolator to minimize vibration transmission to the operator or a higher durometer elastomer to permit better operator control of the screed. The only real choice in Lindley is the higher durometer elastomer. The present invention, on the other hand, provides both vibration minimization and control.

The impact of applicant's invention in the industry is extremely significant. The transmission of vibration to the hand/arm of the operator is now controlled by OSHA regulations in order to prevent operator fatigue and the development carpel tunnel syndrome. Vibratory screeds utilizing the elastomeric isolator mounting of Lindley et al and others have resulted in determinations that one operator may not operate these screeds for more than about 20 minutes per day. Tests on applicant's device, on the other

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hand, have shown an 80%-90% reduction in hand/arm vibration which permits an operator to utilize the screed continuously for eight hours per day.

Claim 1 has been amended to more clearly state the significant aspect of applicant's invention that prevents retainer contact with the vibration isolator during normal operation, but permits the retainer to limit movement of the isolator in order to maintain operator control.

Amended claim 1 is now believed to clearly distinguish over the cited prior art and to be allowable, along with dependent claims 2 and 9.

Claim 10 stands rejected under 35 USC §103(a) as unpatentable over Lindley et al. The Examiner states that it would have been obvious to modify the hardness of the rubber vibration absorbers of Lindley to about 30 durometer hardness because discovering an optimum value involves only routine skill in the art.

This rejection is respectfully traversed in view of the amendment to claim 1 above and the comments made in support thereof.

As indicated above, simply substituting a low durometer isolator in the Lindley construction could minimize the transmission of vibrations to the hands/arms of the operator, but would result in a total loss of screed control. The choice of durometer hardness is, therefore, not a matter of routine selection. It is only in combination with the unique retainer construction that applicant has found it possible to use a low durometer isolator which would, by itself, be unacceptable.

Claims 15 and 20 stand rejected under 35 USC §103(a) as unpatentable over Lindley et al in view of Rouillard (U.S. 6,296,467). Rouillard is additionally cited for teaching a vibrating screed with an engine (14) supported on an exciter mechanism (26). The Examiner finds that it would have been obvious to modify the location of the engine of Lindley to be supported on the exciter mechanism as taught by Rouillard. With respect to claim 20, the Examiner finds the vibration absorbers (42) of Lindley will limit vertical compressive movement and permit substantially greater horizontal shear movement by nature of their relative positioning.

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This rejection is respectfully traversed and reconsideration requested in view of the amendment to claim 15 and the comments which follow.

Lindley is deficient in its teaching for the reasons set forth above with respect to the rejection of independent claim 1. The vibration absorbers (42) of Lindley must be selected to provide either vibration isolation or adequate control of the screed. They do not provide both and, as discussed above, the norm in the industry has been to choose operator control because the screed would otherwise have little practical use. It is only with applicant's unique combination of a low durometer isolator, confined by a retainer, that permits the benefits of both vibration isolation and operator control to be attained.

Applicant notes the Examiner's indication of allowability of claims 3-8, 11-14 and 16-19. However, in view of the foregoing amendments, all of claims 1-20 are now believed to be allowable and further favorable action is earnestly solicited.

Respectfully submitted,

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